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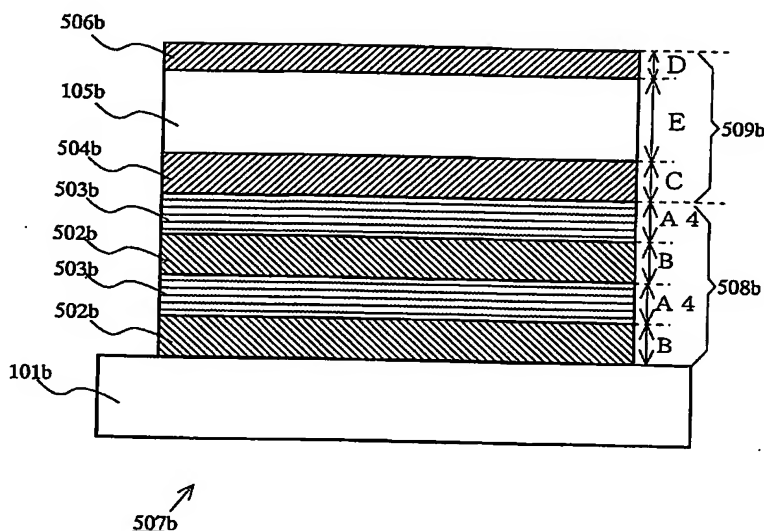
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(54) Title: **ACOUSTIC MIRROR TYPE THIN FILM BULK ACOUSTIC RESONATOR, AND FILTER, DUPLEXER AND COMMUNICATION APPARATUS COMPRISING THE SAME**



(57) Abstract: A thin film bulk acoustic resonator (507b) comprises a substrate (101b), an acoustic mirror layer (508b) provided on the substrate (101b), including a plurality of impedance layers (502b, 503b) alternately having a high acoustic impedance and a low acoustic impedance, and a piezoelectric thin film vibrator (509b) provided on the acoustic mirror layer (508b), including a lower electrode (504b), a piezoelectric thin film (105b) and an upper electrode (506b). The sum of a thickness of the lower electrode (504b) and a thickness of the upper electrode (506b) is 5% or more and 60% or less of a whole thickness of the piezoelectric thin film vibrator (509b), and the thickness of the lower electrode (504b) is larger than the thickness of the upper electrode (506b).



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